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A MEMBER OF ARTHUR YOUNG INTERNATIONAL

MARV ANDERSON & ASSOCIATES LIMITED

Prepared For
The Northern Alberta
Development Council

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November 4, 1983

Mr. Rick Sloan
Project Director and Chairman
Alberta Tourism and Small Business
Northern Development Branch
2nd Floor, Provincial Building
9621 - 96 Avenue
Peace River, Alberta
TOH 2XO

Dear Sir:

We are pleased to present the Final Report for the study - The Development of New Agricultural Land in Northwestern Alberta. This report responds in full to our Terms of Reference (March 31, 1983) and reports on the research phases and tasks specified in the approved Study Design (April 22, 1983).

The study itself, the deliberations which preceded it, and the action which will follow it, constitute a very important chapter in the social and economic development of Northwestern Alberta. Not only have contentious issues and complex matters of high priority been addressed in some depth, but the study has involved the active participation of a significant proportion of the residents of this part of Alberta.

We have surveyed, and measured in quantitative terms the demand for agricultural land from several areas within and outside of Northwestern Alberta. This demand, quantified for the first time, has been delineated in terms of the source of the demand, the characteristics of the farmers looking for land, locational preferences (i.e. block or fringe development), the type of land in demand, and the prospective timing of that demand.

We have examined in some detail the many implications of meeting this demand for new agricultural lands. General benefit-cost assessments have been estimated for the farmers themselves and for established communities in Northwestern Alberta. The major direct costs and some of the direct benefits to the Provincial Government have been gauged. Finally, we have estimated some of the potential macroeconomic impacts across the Albertan economy.

Important conclusions have been reached regarding the interrelationship between forestry, fish and wildife and further agricultural development. Likewise, we have arrived at a number of important conclusions on the nature of the agricultural economy in the region and on the contentious issue of the so-called "viability" of farming in Northwestern Alberta. Finally, we have conducted a review of the crown land disposition process (after posting) in the study area.

As indicated, this important project was characterized by extensive participation on the part of all interested parties. We want to thank you for your attention, cooperation and good humour throughout this complex assignment. Your commitment to project management, thorough research and team-work has contributed in no short measure to the success of this study.

We are indebted to the other Members of our Steering Committee:

- Mr. Carl Leary, Alberta Energy and Natural Resources (Alberta Forest Service)
- Mr. Frank Cardinal, Alberta Energy and Natural Resources (Fish and Wildlife)
- Mr. Gerry Graw, Alberta Energy and Natural Resources (Public Lands)
- Mr. Brian Christie, Alberta Energy and Natural Resources (Resource Evaluation and Planning)
- Mr. Ed Wyldman, Alberta Energy and Natural Resources (replacement for Mr. Christie)

- Mr. Eric Horton, Alberta Agriculture
- Mr. Brian Colgan, Alberta Agriculture
- Mr. Alfred Birch, Alberta Agriculture (replacement for Mr. Colgan)
- Mr. Gerry Archibald, Alberta Tourism and Small Business (Northern Development Branch)
- Mr. Chris Weiss, Farmer
- Mr. Eugene Dextrase, Farmer
- Mr. Al Menice, Farmer

The candid, energetic and conscientious input by all Members of the Steering Committee ensured that the variety of perspectives which characterized the subject under study, were fully addressed. We are also indebted to many Provincial government representatives in Edmonton.

Fundamental to the success of the study, its credibility and especially its future use and value, has been the participation of several hundred residents of Northwestern Alberta. The willing input of over 600 farmers, community representatives, farm organization interests, forestry business representatives, and many others, constitutes the basis of the entire study. We want to express our sincere appreciation of their time, trust and cooperation.

This has been a complex, challenging and exciting project, indicative of the social, political, environmental and economic dimensions of the subject under study. We have enjoyed it and want to thank you for entrusting this assignment to us. We look forward to the early and

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extensive use of this Final Report and the other outputs from this assignment and hope that we can contribute further to the development of Northwestern Alberta.

Yours truly,

David J.A. Douglas
Partner

c.c. Marv Anderson
- Marv Anderson & Associates

Doug M. Graham
Richard A. Nuxoll
Peter J. Laipnieks
- Woods Gordon

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SECTION 1.1

STUDY CONTEXT

SECTION 1.1
STUDY CONTEXT

The management of the land resource is a major factor in daily living in Northern Alberta. In terms of a socio-economic and political entity, Northern Alberta has become what it is today, largely because of the characteristics and potentials of its vast and varied physical environment. Agriculture has, especially since the 1930's, become a very significant facet in the life and economy of this part of Alberta. The question of the social and economic costs and benefits of opening up new agricultural lands, and how these lands might be opened up, is currently being addressed by the Northern Alberta Development Council (NADC).

Many factors in the Region's history have influenced the agricultural sector's prospects and its impacts on the physical and social environment. The introduction of Red Fife wheat in the 1870's and the Homestead Act (1870) spurred on the settlement of Alberta. As early as 1883-85 wheat was grown in the Dunvegan area, then at Old Wife's Lake and Sharfsbury (1886).

With the expansion of the C.P.R. in the early 1900's, the construction of a railway from Edmonton, through Dunvegan to British Columbia (1916), the severe droughts in Southern Alberta and the Order-in-Council in Ottawa (1923) providing one quarter section as a second homestead to drought-impacted farmers, settlement in the Peace Country expanded rapidly. Population grew from 2,000 in 1911 to some 60,000 in 1930. By this time the Region had a good reputation for high quality seed grain. Crop expansion now included wheat, oats, peas, brome and timothy.

Gradually the recognition of environmental constraints (e.g. on the Grey Forest soil types, in drainage, micro-climates) and land management requirements made themselves felt.

In 1939 an agricultural land lease policy replaced homesteading (i.e. 20 year renewable leases with the option to purchase after 10 years). The then Department of Lands and Mines carried out fairly comprehensive cost analyses prior to any new land development. In 1948 an Order-in-Council (113/48) set up the Green Area, separating forestry lands from the settled areas, thereby excluding all agricultural uses other than grazing. The role of the large research centres in Northwestern Alberta (Beaverlodge and Fort Vermilion) has expanded over the years.

In addition to the physical environmental constraints, concern has grown regarding the real costs and benefits (to all parties) of expanding the agricultural area in Northwestern Alberta. This concern has been heightened by:

(a) the lack of definitive evidence on the extent of demand for new land,

(b) the lack of conclusive agricultural economic analysis on the viability of new operations, and

(c) some evidence that Alberta is maintaining a costly agricultural land base by exchanging high quality (CLI - Classes 1 to 3) areas in Southern Alberta, for newly opened but poorer lands (CLI - Classes 4 to 6 and organic) in Northern Alberta.

The NADC has provided a major forum for the discussion of these and related issues.

A major discussion paper "Agriculture in Northern Alberta" was released in September 1978 and an important conference, "Agriculture North Seminar" was held in November 1978. In 1980 Dr. Hugh Horner was commissioned by Alberta Economic Development to prepare a strategy for the meat industry in Alberta throughout the 1980's and to examine the prospects for the agricultural processing sector. In his report, A Review of the Meat Industry in Alberta (1981) the author recommended that an additional 10 million acres of land be made available for agricultural production in the province over a ten year period. Around the same time the Water Advisory Committee (the Kroeger Committee) recommended that an inventory

of lands in the province which could benefit in terms of agricultural production, from drainage and irrigation, be prepared.

With the release of the NADC's report "The Development of New Agriculture Land in Northern Alberta" in December 1982 the Northern Development Branch compiled the prevailing perspectives on the complex issue of opening up new agricultural lands. This report arrayed some of the evidence on agricultural developments to date, the varying and often conflicting viewpoints on further agricultural expansion, and some of the concerns with the land disposal process itself. Further, it identified the need to determine the costs and benefits of large block development versus incremental land development in Northern Alberta.

The Environment Council of Alberta (ECA) prepared draft terms of reference for public hearings on the maintenance of Alberta's agricultural land base, in early 1983. Following review by the Province, the Council was asked to hold hearings "on maintaining and expanding the agricultural land base in Alberta" (ECA - News Release, May 2, 1983).

In order to address these and related issues, a Steering Committee was set up by the NADC, consisting of representatives from various Provincial departments and a number of farmers active in Northwestern Alberta. Terms of reference were prepared for a study on the development of new agricultural land in Northwestern Alberta (February 21, 1983). Qualified consultants were invited to submit proposals to undertake this assignment. On March 23, 1983 Woods Gordon, in association with Marv Anderson, were retained and authorized to proceed with the study. Amended Terms of Reference were concluded on March 31, 1983 and the detailed Study Design was approved on April 22, 1983. The study was completed by October 24, 1983.

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SECTION 1.2

STUDY OBJECTIVES

SECTION 1.2
STUDY OBJECTIVES

The amended Terms of Reference (March 31, 1983) for this project clearly set out the study's objectives. They are as follows:

"1. To survey farmers and prospective farmers located primarily in the western agricultural region of northern Alberta to determine the present and future demand for new land.

2. To prepare cost-benefit analyses from the viewpoint of:

   (a) the farmer's perspective:

   - middle term (10-15 years)
   - long term (40-50 years)

   (b) from the community's perspective:

   - middle term (10-15 years)
   - long term (40-50 years)

   (c) from the province's perspective:

   - middle term (10-15 years)
   - long term (40-50 years)

3. To describe and review the current mechanisms for agricultural land development focussing primarily upon services after the decision to post particular land has been made.

4. To examine the interrelationship issues between the Agriculture and the Forestry industries."

Within the context of these objectives the consultant was charged with undertaking specific tasks. These are set out below:

"1. To conduct an extensive survey of farmers and prospective farmers within the four study areas identified on the attached map (see opposite). Consultants should consider the use of a combination of mail-out techniques, telephone interviews, and personal interviews.

   The survey should address the following dimensions:

   (a) relevant biographical and financial data (e.g., full-time/part-time; income from agriculture, forestry, oil and gas, etc.)

(b) numbers of years of farming experience

(c) history of individual farm development

(d) number of farmers requiring additional farm land

(e) location and ownership of new land from the farmers' perspective

(f) number of acres of land on farm not currently developed

(g) reasons for land requirements:

- expansion
- family unit expansion
- relocation

(h) opinions about cost and benefits to individual farmers over both the short and long term

(i) intended use of new farm land (grain - cattle)

(j) distance farmer is prepared to travel from farmstead to new land

(k) opinions about the general and local need and desirability for further land development

(l) major impediments to individual farmers regarding development

(m) suggestions for improvements that would remove or reduce impediments.

Consultants are to design a preliminary questionnaire in their proposal.

2. To carry out an extensive program of interviews with the following:

(a) key government personnel in Agriculture, Energy and Natural Resources, Environment, Municipal Affairs, Transportation, etc.

(b) community representatives and leaders of various stakeholder organizations; and

(c) municipal government representatives in the North.

3. To prepare a series of cost-benefit analyses that includes:

(a) Costs and Benefits to the Individual Farmers:

This analysis should primarily review the costs of acquiring and developing new farm land compared to the benefits derived from new production. Key secondary costs and benefits should also be included.

(b) Costs and Benefits to the Community:

This analysis should review the cost and benefit to the community or regions; e.g., factors like threshold levels for increased services and infrastructure development should be reviewed.

(c) Costs and Benefits for the Provincial Economy:

This analysis should primarily encompass the general costs and benefits to the provincial government and economy.

Each analysis should cover economic, social, and other costs and benefits over the middle and long term.

4. Based on both the farmer demand survey, key informant interviews, and the cost-benefit analysis, the consultant will be required to put forward one or more alternative scenarios aimed at improving the implementation process for development. These scenarios should include a review of existing governmental services, and the strengths and weaknesses of the existing process. The consultant should propose a series of recommendations in keeping with the development scenarios proposed.

5. To conduct a series of interviews and conduct a literature review that would assist in generally presenting the views of northerners concerning the need for a diverse forestry and agricultural economy in Northwestern Alberta.

6. To focus the study on Northwestern Alberta. The Consultants are encouraged to focus their farmer demand survey on several specific districts or regions as described on the attached map.

7. To prepare a short synopsis on the historical development of land in Northwestern Alberta. This discussion might include statistics indicating growth over the past 40-50 years. A section on how farmers have typically developed land could also be included."

The Terms of Reference directed that:

> "It is not the intent of the study to specifically address the issues of land capability, availability or alternate uses."

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SECTION 1.3

STUDY ORGANIZATION

SECTION 1.3
STUDY ORGANIZATION

The chart opposite displays the organization of the study.

The project was managed by the Northern Development Branch, Alberta Tourism and Small Business (Peace River) with Mr. Rick Sloan, Senior Northern Development Officer as Project Director and Chairman of the Steering Committee. The Departments of Agriculture and Energy and Natural Resources were also represented by senior officials. In addition, three farmers active in farming and agricultural development throughout Northwestern Alberta, were Members of the Steering Committee.

Woods Gordon, Management Consultants, was the prime contractor responsible for the conduct of this assignment and all study outputs. Marv Anderson & Associates Limited acted as sub-consultants. The chart summarizes the principal, overlapping task responsibilities of the consultants.

The Northern Alberta Development Council (NADC) was the client and official recipient of the study's Final Report.

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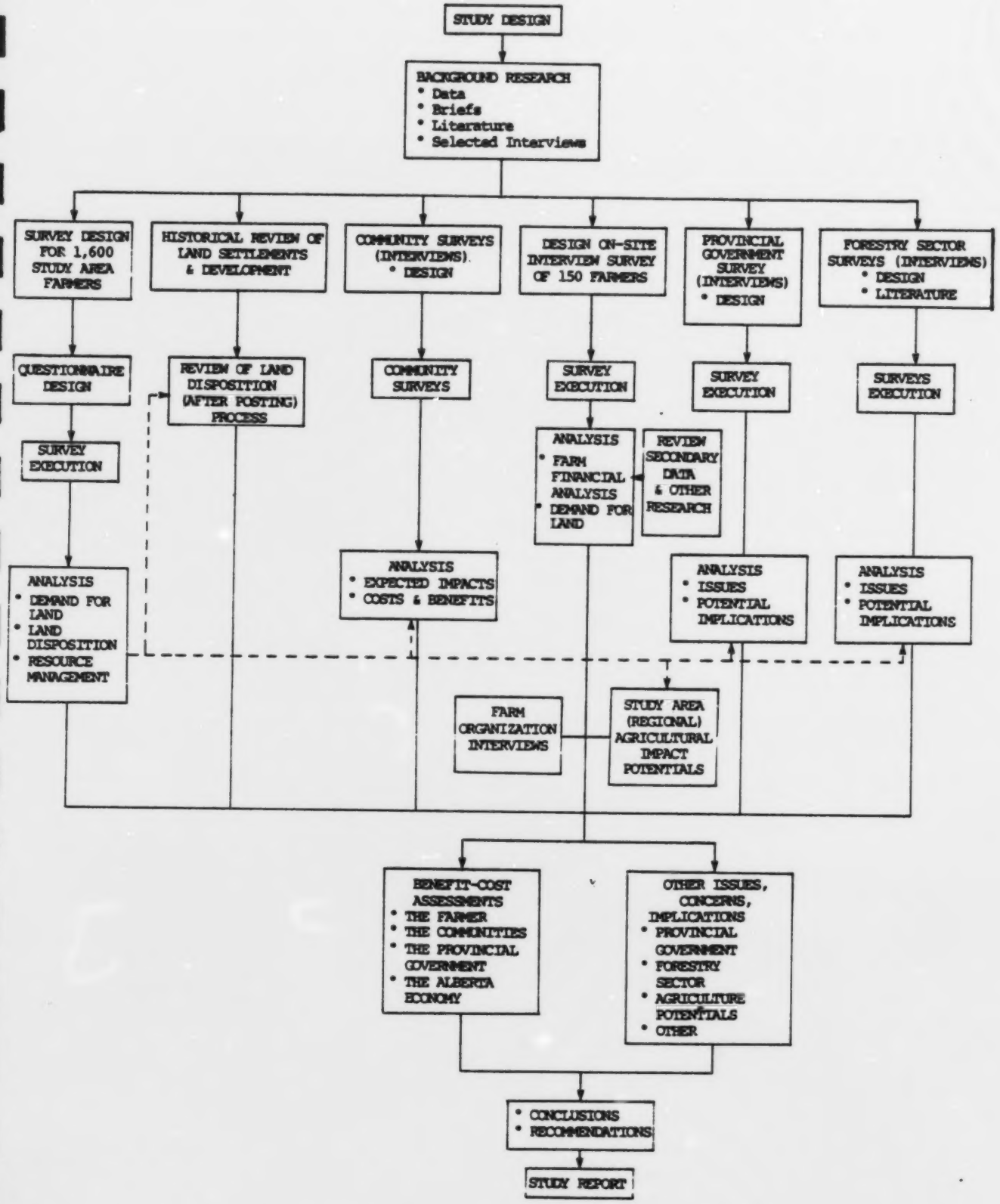
SECTION 1.4

STUDY PROCESS



THE STUDY PROCESS - GENERAL OUTLINE

SECTION 1.4
STUDY PROCESS

The chart opposite provides an outline illustration of the general study process. For further details consult the approved Study Design (April 22, 1983). The seven month study consisted of eight streams of survey, research and analytical activity. They included the following:

- o the preparation of a detailed Study Design, dividing the project into some sixty (60) individual tasks with full activity description and a detailed schedule. This served as the project management document.

- o the background literature and data research together with preliminary start-up interviews.

- o a mailed questionnaire survey of some sixteen hundred (1,600) farmers resident in the four (4)study area zones. The response rate was excellent, in terms of quality and quantity (40%). This provided the larger part of the data base for the entire study and led to an assessment of the potential demand for land, farmers views on the land disposition (after posting) process, critical inputs on resources management and development and many other outputs.

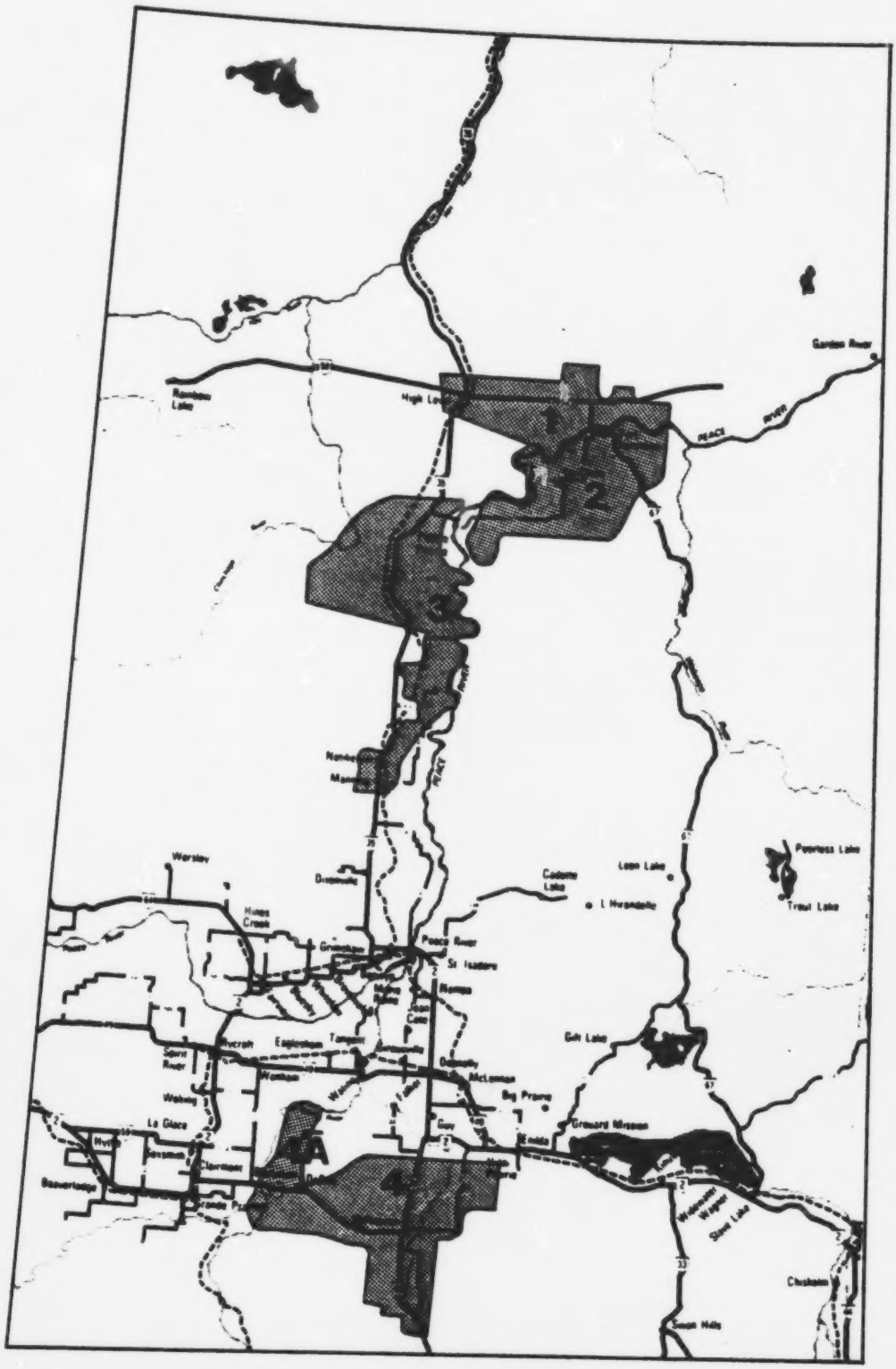
- o a thorough review and assessment of the after-posting disposition process for crown land through a literature review, Provincial officials interviews, interviews with Agricultural Development Committee representatives and input from the farmer surveys.

- o a field programme of on-site interviews with municipal and other community representatives from a cross-section of eight (8) communities across Northwestern Alberta. This provided critical input to determine other local perceptions on the land development issue and the record of community-level impacts.

- o an on-site personal interview survey with one hundred and fifty (150) farmers in all four study area zones. This provided the critical detailed data on farm financial, production and management issues for an analysis of the real world financial feasibility of farming in the study area. It also provided (with the land demand estimates) the base data for estimating new agricultural output potentials for the study area (leading to an Alberta economy impact).

- o a survey of key Provincial government agencies (e.g. Transportation, Energy and Natural Resources, Agriculture) who through their programmes would be impacted (e.g. staff, capital expenditures) due to further agricultural land development. This provided

FARMER DEMAND SURVEY - STUDY AREAS



Western Section of Northern Alberta Development Council Region

0 40 80 km

valuable output on many implications, but also for the eventual benefit-cost assessment.

- o a survey of the forestry sector including the major firms dominating activity in the study area, and a cross-section of smaller operators.

- o the benefit-cost assessments carried out for:

  (a) the farmer,
  (b) the communities,
  (c) the Provincial government, and
  (d) the Alberta economy itself.

  These broad estimates provide a good reading on the balance of potential costs and benefits (a) to each party, and (b) between the four interest groups.

- o preparation of study conclusions and recommendations.

- o preparation of the Final Report.

The study process was an intensive one, characterized by extensive, hands-on work throughout the study area, a great number of interviews, extensive input by the area's farmers and other interests and a close working relationship between the study Steering Committee and the consultants.

A map showing the study area, highlighting the geographical area of the farmer demand survey is presented on the page opposite.

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SECTION 1.5

SUMMARY AND CONCLUSIONS

TABLE 1.5.1

LOCAL FARMER DEMAND - ACRES*

		1983-86	1986-91	1991+
Crown Land	- Grain	157,859	68,830	26,566
	- Forage	26,847	10,818	4,730
	- Improved Grazing	67,102	25,358	13,857
Patented	- Grain	101,232	58,606	30,657
	- Forage	26,098	16,327	19,200
	- Improved Grazing	9,907	9,811	9,917
TOTAL		389,045	189,750	104,987
ANNUAL DEMAND		129,681	37,951	10,498**

OTHER APPLICANT DEMAND FOR CROWN LAND - ACRES**

		1983-86	1986-91	1991+
Crown Land	- Grain	39,390	26,117	13,517
	- Forage	8,522	6,753	5,236
	- Improved Grazing	11,162	12,233	5,994
Patented	- Grain	19,020	6,708	7,584
	- Forage	7,207	4,039	979
	- Improved Grazing	2,789	1,617	--
TOTAL		88,090	57,720	35,127
ANNUAL DEMAND		29,363	11,544	3,513**

LOCAL FARMER'S FAMILY DEMAND - ACRES

	1983-86	1986-91	1991+
Family Member 1	236,302	104,528	43,431
Family Member 2	85,170	74,717	26,576
Family Member 3	35,145	28,891	22,581
Family Member 4	27,507	17,887	17,223
TOTAL	384,124	226,113	109,811
ANNUAL DEMAND	128,041	45,223	10,981***

*"Local Farmers" are the 1,600 residents in the five study area zones (1, 2, 3, 4 and 4A) who were engaged in some form of agriculture in 1982-83 and who were surveyed for this study.

**Applicants resident outside of the study area.

***Used ten year period to determine average.

SOURCE: Woods Gordon (1983)

SECTION 1.5
SUMMARY AND CONCLUSIONS

INTRODUCTION

In this section we summarize the principal findings of the Study. The information that follows is an aggregation of all the detailed information presented throughout the Report and is not a substitute for this detail. For a complete itemization and explanation of the findings the reader is referred to the body of this Report.

1.5.1 THE DEMAND FOR AGRICULTURAL LAND

1.5.1.1 Demand From All Sources

Table 1.5.1 opposite presents our conclusions on the demand for crown land for agricultural purposes in the study area over the next 20 years, by expected land use, timing and source (i.e. local farmer, his family, other crown land applicants).

- o An average annual demand for crown land of some 154,000 acres is expected over the next 20 years from the study area.

1.5.1.2 The Farmer's Survey

The principal summary points and conclusions from our survey of 1,600 farmers in the study area are:

Farmer Characteristics

- o age of the farmer is normally distributed but with younger farmers in the north (i.e. Zone 1 and 2)
- o the average farming experience is 13.86 years with the zonal breakdown as 1 - 13.06; 2 - 12.93; 3 - 16.20 and 4 - 13.63
- o the average farm size is approximately 1 1/2 sections with approximately 75% owned and 25% leased; there are major zonal differ-

ences in the average farm size but ownership rates are relatively stable

- o on the average farm, which is approximately 950 acres, 610 acres are cultivated and 340 acres are unimproved
- o approximately one-third of the respondents' present farm size has been cleared since they started farming it, but for Zone 1 and 2, this figure is significantly higher (i.e. 45-50%)
- o approximately 18.4% of the respondents' present farm is available for further clearing; on a zonal basis, the percentages are 1 - 16.5%; 2 - 18.4%; 3 - 15.1% and 4 - 20.3%
- o very few farmers are completely dependent on farm income for their livelihood but rely on a variety of income sources for their livelihood (e.g. forestry, service industry, oil and gas)
- o farming contributes 81-100% of family income for only about one quarter of young farmers (i.e. less than 5 years in farming in the area), whereas it accounts for about 40% of family income for older farmers (i.e. those with over 16 years farming experience in the area). Off-farm income is critical to all farmers, especially the beginner farmer
- o the larger the farm unit the greater the dependency on agriculture as a source of family income
- o most farmers received most of their farm production from grain production, with livestock production providing a significant amount of farm income in certain areas (i.e. Zone 4)
- o the average distance to grain delivery points was 68 km. but this increased to an average of 107 km. in Zone 2 while farmers in Zone 4 had to travel only an average of 18 km.

The Demand for Land

- o approximately 80% of respondents have applied for crown land while 61% have purchased crown land; there are major zonal differences regarding crown land purchase (i.e. Zone 1 - 70.6%; 2 - 69.0%; 3 - 51.8% and 4 - 59.2%)
- o the larger the farm unit, the greater the probability of the farmer having applied for crown land
- o the factors that have caused the highest degree of difficulty in purchasing and developing crown land are the 'high cost of credit' and the 'high cost of clearing and breaking land'

- o the 'cost of purchasing land' and the 'process' were the two factors causing the most difficulty in acquiring crown land
- o the 'high cost of acquiring developed land' was the most important factor in their decision to apply for crown land
- o the provision of roads and services is only a moderate concern with farmers who have purchased crown land
- o distance to elevators is a moderate to high concern for two thirds of the farmers who have purchased crown land
- o approximately 80% of respondents plan to increase production, with the expansion of the cultivated area on their present farm and the purchase of undeveloped crown land the primary ways of doing it
- o the larger the farm unit, the greater the likelihood of increased farm production
- o the longer farmers farm the area, the greater the likelihood that more crown land will be demanded. Only 58% of farmers with less than 5 years experience require additional crown land, whereas some 70-87% of those with over 11 years experience require crown land
- o however, there is not a clear relationship between farm size and the acquisition of crown land as the principal means of expanding production
- o about one quarter of the farmers who plan to increase production, will do so without the purchase of crown land
- o for farmers that are very dependent on farming (81-100% of family income) there is less indication that they plan to increase production. This suggests that these farmers are more satisfied with their income situation than other farmers
- o farmers with less than 20% of their income from farming also indicated less likelihood that they would increase production
- o the beginner farmer (under 20 years of age) and the mature farmer (41-60 years old) are proportionally the strongest proponents of crown land development for increased farm production
- o very few farmers (3.0%) want to relocate but would rather expand their present farm and are willing to travel an average of 16 km. to do so; the smaller the farming unit the greater the tendency to relocate
- o the demand for land is concentrated in the 1983-86 period with the majority of demand for grain land (i.e. 85-89% of all demand)

except in Zone 4 (i.e. 46.3%) where there is an extremely high demand (i.e. 39.8%) for improved grazing land

- o there is a very significant portion of the present demand from the farmer's family with a majority of the demand in the near future, possibly indicating that the family members are now in the market for additional land

- o there was a very strong endorsement from the respondents for the future development of crown land

Forestry and Other Resources

- o most respondents (77%), across all age groups, feel forestry to be important to their local economy with the north part of the Peace Country (i.e. Zone 1 and 2) giving almost unanimous recognition of forestry's importance to their economies

- o it is noteworthy that the vast majority (78%) of farmers who plan to increase production, ranked the importance of forestry in their local economy as "high"

- o 30% of respondents indicated that not enough timber is being devoted to farmer use; on a zonal basis the percentages were: 1 - 38.0%; 2 - 24.3%; 3 - 20.6% and 4 - 33.2%

- o the two major benefits of the forestry resource are off-farm employment and farmer wood supply (no zonal differences)

- o only 14.1% of respondents indicated they received no benefits from the forestry resource but there were major zonal differences (i.e. Zone 1 - 24.3%; 2 - 4.3%; 3 - 13.6% and 4 - 15.4%)

- o farmers were willing to travel an average of 37 km. to harvest their own timber supply

- o approximately two-thirds of respondents felt fish and wildlife was important to their local economy with the major benefits being recreation and food supply

- o there was a large amount of indecision on the question of whether game ranching could be commercially viable

- o the activities that were thought to have the greatest chance of commercial success are big game ranching followed by fur farming; fish farming was given recognition in Zones 2 and 4

- o the respondents were split on the question of whether outdoor recreation opportunities should be expanded, except in Zone 1 where it was given a very strong endorsement (86%)

TABLE 1.5.2

SUMMARY OF THE BENEFITS AND COSTS TO THE FARMER AND THE COMMUNITY AS A RESULT OF OPENING-UP 154,000 ACRES OF LAND PER YEAR FOR 20 YEARS FOR AGRICULTURAL PURPOSES

(5% Discount Rate: $M)

Time Period	Estimates of Farmer Benefit/Cost Ratio	Estimates of Community Benefit/Cost Ratio
1	--	4.47
10	.51	2.20
20	1.00	1.88
50	1.81	1.63

TABLE 1.5.3

SUMMARY OF THE DIRECT COSTS AND REVENUES TO THE PROVINCIAL GOVERNMENT AS A RESULT OF OPENING-UP 154,000 ACRES OF LAND PER YEAR FOR AGRICULTURAL PURPOSES

(5% Discount Rate: $M)

Time Period	Total Costs	Total Revenue
1	30,887	10,780
10	352,213	83,754
20	523,967	134,827
50	663,634	-

Note: The figures for the Provincial Government only include direct costs and revenues and exclude taxes, royalties and other indirect revenues pursuant to agricultural and related developments.

- o the two recreation activities that farmers would like to see developed are day use areas and water access for fishing except in Zone 4 where fish stocking was given top ranking

1.5.1.3 Other Crown Land Applicant Survey

From our survey of over 200 other crown land applicants (outside of the study area) this section describes the demand characteristics:

- o most of the applicants are relatively young (i.e. 21-40 age group)
- o 85% of applicants have farming experience or are currently farming
- o the primary reason for applying for crown land was to expand their present farm unit
- o most of the demand is for crown land for grain production in the 1983-86 period
- o approximately 30% said anywhere in Northwestern Alberta would suffice as a place to farm but more importantly the other 70% were very specific about the location where they wanted land
- o regarding the factors of development, the highest degree of difficulty was with the high cost of credit followed by the high cost of clearing and breaking land
- o the high cost of acquiring developed land was the primary reason the respondents applied for crown land
- o the process of application (i.e. the way notice was given, the time taken, the appeal process) caused the greatest problem for the applicants in applying for crown land
- o most respondents indicated that land should be made available by opening areas adjacent to present agricultural lands.

1.5.2 BENEFIT/COST ASSESSMENT - GENERAL

Tables 1.5.2 and 1.5.3 opposite presents our assessment of economic benefits and costs based on the estimated demand for 154,000 acres of crown land for agriculture per year, for 20 years. The cost and benefit (revenue) figures are presented for three of the four components investi-

gated; the farmer, the community, and the Provincial government. The fourth component, the Albertan economy, has been assessed in terms of gross benefits (value added production). The benefit/cost ratios must be interpreted as broad orders of magnitude. The relative difference between costs and benefits and between the ratios for different sectors is the important measure.

For the farmer, the benefit/cost ratio indicates that farming will not be economically beneficial until year 20. For the average established community, economic benefits outweigh costs almost 4.5 to 1 in year 1, indicating that the communities benefit from agriculture land expansion immediately and to a very large degree. On the other hand, direct costs outweigh direct revenues to the Provincial Government throughout all years in a long term period (up to 50 years). Clearly the communities receive the majority of the economic benefits and the Provincial Government is responsible for the larger proportion of the costs incurred. The relative benefits to the farmer become the largest at year 50, where they surpass the benefits to the community.

The primary reason why it takes from 20-50 years for the farmers to start realizing benefits is due to the large up-front and early capital investments they must incur. At the same time their cash-flow is not as healthy as it becomes later on. In terms of cash-flow, it is primarily for this reason that off-farm employment is so critical to the farmer in his first 20 years of operation.

The reason for the decreasing benefits to the community is related to the relative increases in both the benefit and cost stream. The cost stream increases are larger. However, the absolute economic benefits are more significant which is why the benefit/cost ratio remains greater than 1. Even if the benefit and cost streams were to be taken out even further in time, the ratio would always be greater than 1 because the cost stream calculation is a function of the benefit stream (and is less than 1).

TABLE 1.5.4

ESTIMATES OF NET (ECONOMIC) BENEFITS

AS A RESULT OF OPENING-UP 154,000 ACRES

OF LAND PER YEAR FOR 20 YEARS FOR AGRICULTURAL PURPOSES

(5% Discount Rate)

Time Period	Estimates of Net (Economic) Benefits Per Acre to the Farmer	Estimates of Net (Economic) Benefit Per Acre to the Communities
1	-$174.32	+$150.26
10	- 122.68	+ 155.95
20	+ .78	+ 154.32
50	+ 238.37	+ 222.92

TABLE 1.5.5

ESTIMATES OF DIRECT NET (ECONOMIC)

REVENUES TO THE PROVINCIAL GOVERNMENT

(5% Discount Rate)

Time Period	Revenues Per Acre
1	-$130.56
10	-$174.32
20	-$126.34
50	-$215.46

As is noted in the body of this Report, the direct costs to the Provincial Government continue to increase due to the fact that once infrastructure is put in place and staff added to accomodate the potential increase in agricultural land expansion, the infrastructure must be maintained and the staff employed to manage the increases that have occurred. On the direct revenue side, the sale of public lands stops at year 20. The direct costs to the Provincial Government would continue to decrease as time progressed.

1.5.3 ESTIMATES OF NET (ECONOMIC) BENEFITS PER ACRE

A useful way to assess the extent of the costs and benefits is to calculate the net benefit per acre for each of the three components assessed. This figure indicates the absolute benefit (be it positive or negative) for the three components, which is 'hidden' in the benefit/cost ratio. These figures are presented on Tables 1.5.4 and 1.5.5 opposite.

As can be seen, the net benefit per acre to the farmer is negative in the first 10 years. When year 20 is reached the net benefit becomes modestly positive and increases significantly by year 50. This trend and associated figures mirrors the benefit/cost ratio presented earlier.

The net benefit per acre to the community generally increases over time. The largest increase comes between year 20 and 50 largely because some of the costs to the community stop at year 20.

The net direct revenue per acre to the Provincial Government is in a negative position for all time periods assessed. The negative net direct revenues per acre continually increase. Up to year 20, the increase is proportionate to the years. After year 20, the increase is dramatic because the direct revenues to the Provincial Government, in the form of land sales, stops at year 20. After this point in time there are only direct costs to the Government.

1.5.4 BENEFIT/COST ASSESSMENT: THE FOUR SECTORS

1.5.4.1 The Farmers

(a) The demand for agricultural land does not arise from a purely financial perspective. ("Can I make money?") Even considering potential capital gains, there are very obviously strong non-monetary motives related to homesteading and farm development. For example, in this age of large organizations (where virtually everyone is either an employee or unemployed), the opportunity to develop your own farm, your own livelihood, and your own life-style is unique. To be able to develop your own small business without considerable initial capital (in comparison to other agricultural regions and other independent small businesses) is particularly unique.

(b) Commercial farms and farmers in Northwestern Alberta are not unlike their counterparts in other regions of the province. It may be slightly riskier to farm in Northwestern Alberta (because of, primarily, climatic variability), but it has not been shown that it is any more or less economic to farm in this region than elsewhere in the province. (In a perfectly competitive market for agricultural land, the price of land would adjust to provide for similar rates of return to land between regions.)

(c) Commercial agriculture in Northwestern Alberta is, like elsewhere, relatively capital intensive with narrow margins. Thus, very good management is also required. Good management is region-specific. It takes years of training and adaptation to local conditions to be a successful farmer.

(d) What is different about agriculture in Northwestern Alberta is that it is physically expanding on a land base with generally lower soil capabilities than most other agricultural regions in Alberta. Thus, it is perceived by local residents and other Albertans as a growing

industry in the region. At the present time, this is considered the "frontier". Thus, it is also a relatively young area with (naturally) more "growing pains" than other more mature agricultural regions. This is especially true regarding the more urgent need to develop equity - owned capital, both private and public. In a "new" region, the need to invest in additional human capital is also very important.

(e) The demand for agricultural land in the region, therefore, comes from numerous sources: previous farmers in the "south" who are "trading up"; the truck driver who is tired of "it all"; young individualists who still dream of a "place in the sun"; people who just want to "start over"; local farmers who are still trying to develop a (larger) viable farm unit; or local farmers' children who want to farm close to home. This demand, obviously, is largely located wherever land is available for settlement.

(f) Agriculturalists tend to focus almost exclusively on the need for viable commercial farm development. For these people, this is almost the sole purpose of developing more land for agriculture. Much of the present frustration in the agricultural community probably stems from the social-political need to look at land development in the Northwestern Alberta with numerous objectives in mind. In this context, some conflict between various interest groups is almost inevitable (and one might even argue, healthy).

(g) The complementary and conflicting development requirements of various economic sectors are abundantly clear. The actual and potential conflicts are equally obvious (e.g. agriculture displacing forestry).* Somewhat more obscure but no less important, however,

* Note that forestry includes forestry management (e.g. for future cutting, for water management) as well as wood and fibre production.

are some very real complementarities. Aside from the (conventional) structural linkages between sectors, this is highlighted by looking at the off-farm employment requirements of farmers (and their family). Off-farm employment opportunities are very important to the further development of agriculture in the Northwestern Alberta. Farmers comprise a major component of the forestry labour force.

(h) Future growth in the Northwestern Alberta should exploit these complementarities to effectively dilute any potential conflicts inherent in some resource management issues. Conversely, no growth or slow growth could exacerbate potential conflicts over future resource use (although the opposite could also be argued).

(i) The agricultural community in Northwestern Alberta is very much aware of the required role of government (especially the Provincial Government) in the ongoing development process, because public expenditures are ongoing (versus in an older community, where already sunk costs are largely ignored by both the government and local residents) and are all pervasive in community life. The required infrastructure (and associated institutions) is a recognized prerequisite to future agricultural expansion in the region (just as it is in any developing region). The central role of government is further highlighted because of the public's growing awareness of competing demands for land (e.g. agriculture and forestry), environmental concerns, and, last but not least, the distance from the economic, social, and political "centre". Further growth will facilitate shifting this centre further north, in terms of balance, whereas stagnation would tend to support the status quo.

1.5.4.2 The Communities

(a) The social and economic implications of opening new lands to the communities of Northwestern Alberta will be very significant. The economic benefit/cost ratios were estimated to be from 1.63 (year

50) to 4.47 (year 1), reflecting the likelihood of an overwhelmingly positive economic benefit to the communities. These ratios were calculated for all communities in general. The benefit would likely be much more positive if the land development is near one or two particular communities.

(b) As an example, if 250,000 acres were developed around a particular community over 10 years, the net benefit could be in the order of $40 million to the community; the bulk of this benefit being retail and service expenditures, as well as road construction and land clearing. Using the assumptions presented in the Report (see Section 4.3), this amount of land development could lead to an increase of approximately 1,000 people in the region and approximately 450 in the community over the 10 years.

Therefore, if the land development is spatially concentrated in certain areas, some communities will benefit tremendously. On the other hand, these same communities will incur some major costs in developing the community infrastructure and services necessary to accommodate a relatively large influx of new residents (e.g. water and sewage facilities, local roads, social services).

(c) In conclusion, from the reported costs and benefits and the quantitative assessment, it is our estimation that the anticipated benefits to the communities will far outweigh any costs that may occur.

To properly develop the new land of Northwestern Alberta, there will be a tremendous amount of human and capital resources needed. The communities of Northwestern Alberta already have the bulk of these resources (e.g. community services, contractors, business services) needed to accommodate the incremental development of new land. As the land is developed and the rural population expands, the communities will be the support base for these new residents.

Therefore, not only will the communities benefit during the development stage (e.g. road building, land clearing, machinery and material sales) but will continue to benefit as the farms expand, become fully developed and as the regional and community population grows to accommodate for the new found wealth of increased agricultural production.

(d) We have not taken into account potential social costs and other secondary impacts which should have a bearing on a final, balanced decision regarding new agricultural land development (or any major resource development). These costs might include the loss of some recreational opportunities, aesthetic deterioration of the landscape, land degradation, erosion impacts and other effects.

1.5.4.3 The Provincial Government

(a) Clearly, the expansion of agricultural land in the Study Area represents a significant direct cost to the Provincial Government over and above any direct revenue stream. This is as expected, since the majority of the benefits associated with the Provincial Government's expenditures are realized at the community and individual levels. Even if more extensive secondary and tertiary benefits (e.g. income tax, corporation tax, license fees and other revenues) were to be estimated and included in our assessment, it is likely that the Provincial Government costs would continue to exceed revenues over the period.

(b) Once committed to the agricultural expansion program, the majority of resultant costs to the Provincial Government last beyond the initial expansion period of 20 years. Therefore, the costs to the Provincial Government are long term.

(c) The primary costs of agricultural expansion will be placed on the Departments of Transportation and Environment (the latter for drainage improvements).

(d) The costs to the Provincial Government are in the areas of:

- o capital improvements (roadways and drainage improvements)
- o maintenance of the capital improvements
- o improvement of the data base in the Study Area to better plan for and accomodate agricultural expansion
- o staff (including overhead) primarily for enforcement, planning and extension services

(e) Given the amount of C.L.I. Class 4 and better land in the Yellow Area, the amount of land in the Green Area currently being utilized by the forest industry, and the amount of demand estimated in this Study, no direct significant economic impact is expected on the forest industry.

(f) The primary issues as reported to us are detailed in the body of the Report. They are too numerous to repeat here. However, a major theme that re-occured across most of our interviews was the need to plan any expansion of agricultural land so as to minimize disruptions and reduce costs (e.g. up-front planning has the potential of reducing drainage costs).

The second major theme was the need to critically assess the standard at which services are initially provided for agricultural expansion. The feeling was expressed that the existing standards for a number of services may be too high, in terms of initial provision. Reducing the level of services provided, during the early start-up years in land development, could reduce costs to the Provincial Government and perhaps speed up expansion. Services

could be brought up to normally acceptable levels after the initial development period.

1.5.4.4 The Provincial Economy

(a) The potential growth in output (resulting from the increase in agricultural land and pension) from the agricultural base of Northwestern Alberta was translated into broad estimates of economic impacts on other provincial economic sectors and the overall provincial economy. General impact estimates were calculated using the Alberta Input-Output tables.

(b) Grain production is export oriented (80-90% exported). The impact of extensive additions to Northwestern Alberta's agricultural base does not therefore, have very substantial impacts throughout other sectors of the provincial economy. However, the expansion (a) leads to growth in a number of key sectors, (b) brings in export earnings to Alberta and Canada, and (c) raises the potential of further expansion in the manufacturing sector in Alberta (especially in food and farm machinery). For every $1 expansion in demand for the study area's grain output, there is a potential for a $1.136 expansion in output from the whole provincial economy.

(c) In contrast, the forestry products sector in Alberta has a significantly higher potential for income and employment spin-offs within the provincial economy. For every $1 expansion in demand for the study area's forestry products (using province-wide relationships), there is a potential expansion of $1.69 in all other economic sectors. This potential impact is 49% greater than that for the grains sector.

On a sector-by-sector basis, for comparison, the forestry products sector could have an impact on the manufacturing sector some 82% larger than the spin-off impacts of the grains sector. The

multiplier effect on the wholesale and retail trade sector would be equally greater.

(d) The forestry products sector's impact on the transportation and storage sector could be over five times that of the grains sector's impacts.

(e) While long term development of the region might lead to more value added agricultural production and higher local employment and income impacts than those suggested by today's economic relationships, the same diversification of an already diversified regional forestry industry may also occur.

(f) In summary, the potential demand for new agricultural lands suggested by our surveys and research can be translated into a potential for a major expansion of the study area's agricultural economy. There could be as much as an additional $1.638 billion in expanded production (NVA). This could have various spin-offs throughout the Alberta economy, amounting to an additional $1.862 billion in new value added. However, the export orientation of the grains sector, the relatively small Alberta market and the institutional factors (e.g. the revisions to the Crow Rate) restraining further value added processing in this part of Canada, all militate against a larger beneficial multiplier impact within Alberta, in contrast to (for example) the forest products sector.

1.5.4.5 Benefit-Costs and the Development of New Agricultural Lands in Northwestern Alberta

(a) The decision to expand or restrain the development of new agricultural lands in Northwestern Alberta cannot be, and should not be made on purely economic grounds. Our analysis indicates the likely order of magnitude of costs and benefits, and equally important, the distribution of these. Resource development decisions will

therefore have to be made on the basis of (a) social equity, (b) environmental management, (c) general regional development priorities, as well as (d) the economics of an adequate return to Provincial expenditures.